



Copyright © 2010 Pearson Canada Inc., Toronto, Ontario.

All rights reserved. This publication (work) is protected by copyright. You are authorized to print one copy of this publication (work) for your personal, non-commercial use only. See [Terms of Use](#) for more information.

Permission should be obtained from the publisher prior to any prohibited reproduction, storage in a retrieval system, use on an interactive whiteboard or transmission in any form or by any means, electronic, mechanical, photocopying, recording, or likewise. Contact the [Permissions Department](#) for more information.

Except as allowed in the preceding paragraphs, you may not modify, copy, distribute, republish, commercially exploit, or update this publication (work) or any other material on this web site without the prior consent of Pearson Canada. No intellectual property or other rights in and to this publication (work) are transferred to you.

ADDISON WESLEY

Ontario

Math Makes Sense

3

Ontario 2005

Curriculum Companion

- **Using Your Curriculum Companion**, page 2
- **What's New at Grade 3**, page 3
- **Unit 1: Patterns in Whole Numbers**, page 4
- **Unit 2: Ratio and Rate**, page 5
- **Unit 3: Geometry and Measurement**, page 7
- **Unit 4: Fractions and Decimals**, page 9
- **Unit 5: Data Management**, page 10
- **Unit 6: Measuring Perimeter and Area**, page 13
- **Unit 7: Geometry**, page 16
- **Unit 8: Working with Percents**, page 17
- **Unit 9: Integers**, page 18
- **Unit 10: Patterning and Algebra**, page 19
- **Unit 11: Probability**, page 21
- **Correlation**, page 22

Using Your Curriculum Companion

Addison Wesley Mathematics Makes Sense is a comprehensive program designed to support teachers in delivering core mathematics instruction in a way that makes mathematical concepts accessible to all students - letting you teach for conceptual understanding, and helping students make sense of the mathematics they learn. **Addison Wesley Mathematics Makes Sense** was specifically written to provide 100% curriculum coverage for Ontario teachers and students. **The Math Makes Sense** development team wrote, reviewed, and field tested materials according to the requirements of The Ontario Curriculum, Mathematics, released in 1997. Now, with Ontario's initiative for Sustaining Quality Curriculum, the same development team is pleased to provide further support in this **Curriculum Companion**.

Your **Curriculum Companion** provides you with the specific support you need to maintain 100% curriculum coverage according to the revised 2005 release of The Ontario Curriculum. In this module, you will find:

What's New At Grade 3?

This one-page chart provides your year-at-a-glance, with notes detailing where new curriculum requirements have arisen in the 2005 curriculum.

Unit Planning Charts

For each unit, a one-page overview that recommends required or optional lessons, and indicates whether this module provides additional teaching support to ensure curriculum coverage.

Curriculum Focus Notes

The revised curriculum introduced some new expectations that already form part of the overall conceptual framework on which your Grade 3 program was built. In order to meet these expectations in a more explicit way, **Curriculum Focus Notes** suggest ways that you might use the **Math Makes Sense 3** Student Book lesson context to address the expectation. If relevant, the suggestion includes use of an **Extra Practice** master, available in reproducible form following the teaching notes.

Curriculum Focus Notes follow in sequence, where relevant, after the **Unit Planning Chart**.

Reproducible Masters, with Answers

You'll find reproducible masters provided for any expectation that requires such additional support. Answers for masters are provided with the teaching.

Curriculum Correlation

Go to page 22 to find a detailed curriculum correlation that demonstrates where each expectation from your Grade 3 curriculum is addressed in **Addison Wesley Math Makes Sense 3**.

What's New at Grade 3?

Unit	Curriculum Focus Notes	Curriculum Focus Masters
2	2.11: Adding 3-digit Numbers	
3	3.4: Sorting Figures	
5	5.3: Interpreting Graphs	Master 5.30
6	6.11: Exploring Capacity: The Millilitre	
	6.13: Exploring Mass: The Gram	
10	Technology: Patterns on a Computer	

Unit 1 Patterning and Place Value

Lesson	Curriculum Coverage	Lesson Masters and Materials
Lesson 1: Patterns in a Hundred Chart	Required	
Lesson 2: Counting on a Hundred Chart	Required	
Lesson 3: Counting on a Number Line	Required	
Lesson 4: Comparing Numbers on a Number Line	Required	
Lesson 5: Grouping and Counting to 100	Required	
Lesson 6: Modelling 2-Digit Numbers	Required	
Lesson 7: Ordinal Numbers	Optional	
Lesson 8: Modelling 3-Digit Numbers	Required	
Lesson 9: Extending Hundred Chart Patterns	Required	
Lesson 10: Comparing and Ordering Numbers	Required	
Lesson 11: Showing Numbers in Many Ways	Required	
Lesson 12: Strategies Toolkit	Required	
Lesson 13: How Much is 1000?	Required	
Lesson 14: Rounding Numbers	Required	
Unit Problem: Come to the Fair!	Required	

Lesson 7: While the material in this lesson is not specifically required by the Grade 3 curriculum, this lesson can be used to connect to new material in Unit 8. This lesson should be taught in the first two years of implementation to accommodate students' transition to the new curriculum.

Unit 2 Patterns in Addition and Subtraction

Lesson	Curriculum Coverage	Lesson Masters and Materials
Lesson 1: Patterns in an Addition Chart	Optional	
Lesson 2: Addition Strategies	Optional	
Lesson 3: Subtraction Strategies	Optional	
Lesson 4: Related Facts	Required	
Lesson 5: Find the Missing Number	Required	
Lesson 6: Adding and Subtracting 2-Digit Numbers	Optional but recommended	
Lesson 7: Using Mental Math to Add	Required	
Lesson 8: Using Mental Math to Subtract	Required	
Lesson 9: Strategies Toolkit	Required	
Lesson 10: Estimating Sums and Differences	Required	
Lesson 11: Adding 3-Digit Numbers	Required: See Focus Note 2.11	
Lesson 12: Subtracting 3-Digit Numbers	Required	
Lesson 13: A Standard Method for Addition	Required	
Lesson 14: A Standard Method for Subtraction	Required	
Unit Problem: National Read-A-Thon	Required	

Lesson 6: While the material in this lesson is not specifically required by the Grade 3 curriculum, this lesson can be taught to activate students' prior learning before they add and subtract 3-digit numbers in Lessons 11 and 12. This lesson should be taught in the first year of implementation to accommodate students' transition to the new curriculum.

Lesson 11: Adding 3-Digit Numbers

Focus Note 2.11

Curriculum expectation: Use estimation when solving problems involving addition and subtraction, to judge the reasonableness of a solution.

Curriculum Focus

Your curriculum requires students to make estimates and compare the results of their computations to those estimates.

Throughout the remainder of Unit 2, extend some *Practice* questions by having students first make an estimate when performing computations. After each computation, have students compare the estimated answer and computed answer to check for reasonableness.

You may wish to extend these *Practice* questions to include estimation:

Lesson 11: #3 and 4

Lesson 12: #4 and 7

Lesson 13: #7, 8, and 11

Lesson 14: #6 and 7

Unit 3 Geometry

Lesson	Curriculum Coverage	Lesson Masters and Materials
Lesson 1: Describing Figures	Required	
Lesson 2: Describing Angles	Required	
Lesson 3: Naming Figures	Required	
Lesson 4: Sorting Figures	Required: See Focus Note 3.4	
Lesson 5: Congruent Figures	Required	
Lesson 6: Making Pictures with Figures	Optional	
Lesson 7: Strategies Toolkit	Required	
Lesson 8: Identifying Prisms and Pyramids	Required	
Lesson 9: Sorting Solids	Required	
Lesson 10: Making Models from Figures	Required	
Lesson 11: Making a Structure from Solids	Optional	
Unit Problem: At the Beach	Optional	

Lesson 4: Sorting Figures

Focus Note 3.4

Curriculum expectation: Compare various angles, using concrete materials and pictorial representations, and describe angles as *bigger than*, *smaller than*, or *about the same as* other angles (e.g., “Two of the angles on the red pattern block are bigger than all the angles on the green pattern block.”).

Curriculum Focus

Your curriculum requires students to use the words *bigger than*, *smaller than*, and *about the same size as* in describing angles as compared to other angles.

In Lesson 2, students should have made the connection that angles that are greater than a right angle are *bigger than* a right angle, and angles that are less than a right angle are *smaller than* a right angle.

Extend *Explore* by having students number the angles in each quadrilateral cutout from 1 to 4 (Figures R, G, K, T, and Q). Students compare and describe all the angles numbered 1, all the angles numbered 2, and so on. Ensure students use the words *bigger than*, *smaller than*, or *about the same as* when comparing the angles.

Unit 4 Multiplication and Division

Lesson	Curriculum Coverage	Lesson Masters and Materials
Lesson 1: Relating Multiplication and Addition	Required	
Lesson 2: Using Arrays to Multiply	Required	
Lesson 3: Multiplying by 2 and by 5	Required	
Lesson 4: Multiplying by 10	Optional	
Lesson 5: Multiplying by 1 and by 0	Required	
Lesson 6: Using a Multiplication Chart	Required	
Lesson 7: Strategies Toolkit	Required	
Lesson 8: Modelling Division	Required	
Lesson 9: Using Arrays to Divide	Required	
Lesson 10: Dividing by 2, by 5, and by 10	Required	
Lesson 11: Relating Multiplication and Division	Optional	
Lesson 12: Number Patterns on a Calculator	Required	
Unit Problem: Here Comes the Band!	Required	

Unit 5 Sorting and Data Management

Lesson	Curriculum Coverage	Lesson Masters and Materials
Lesson 1: Sorting by Two Attributes	Required	
Lesson 2: Sorting by Three Attributes	Required	
Lesson 3: Interpreting Graphs	Required: See Focus Note 5.3	Master 5.30
Lesson 4: Interpreting Circle Graphs	Required	
Lesson 5: Drawing Pictographs	Required	
Lesson 6: Drawing Bar Graphs	Required	
Lesson 7: Strategies Toolkit	Required	
Lesson 8: Collecting Data	Required	
Lesson 9: Conducting a Survey	Required	
Unit Problem: Using Data to Answer Questions	Required	

Lesson 3: Interpreting Graphs

Focus Note 5.3

Curriculum expectation: Demonstrate an understanding of mode (e.g., “The mode is the value that shows up most often on a graph.”), and identify the mode in a set of data.

Student materials: Master 5.30

Curriculum Focus

Your curriculum requires that students begin to understand mode, a measure of central tendency.

Extend *Connect*. Introduce the terms *mode* and *data set*. Provide examples of data sets and have students find the mode. Include data sets that have more than one mode or no mode.

Example: Find the mode of each data set.

- a) 2, 5, 3, 3, 2, 6, 3 (*Answer: 3*)
- b) 2, 6, 1, 8, 4, 0, 3 (*Answer: no mode*)
- c) 5, 2, 0, 0, 4, 7, 5 (*Answer: 0 and 5*)

Model how to find the mode on the pictograph in *Connect*. (*Answer: December*) To reinforce this concept, have students find the value that occurs most often on each graph in the lesson.

Also, have students complete Master 5.30, Finding the Mode of a Data Set.

Answers to Master 5.30:

1. a) carrots b) hockey c) 4 d) 76 and 89
2. Sample data set: 10, 3, 6, 10, 10, 1
3. Sample data set: 15, 17, 15, 18, 15, 19, 15, 15, 20
4. The first data set has no mode; the second data set has more than one mode, and the third data set has one mode.

Master 5.30

Finding the Mode of a Data Set

1. Find the mode of each data set.

a) carrots, peas, peas, lettuce, carrots, carrots, lettuce

b) soccer, hockey, hockey, baseball, hockey, baseball, baseball, hockey

c) 8, 4, 4, 4, 6, 5, 4, 3, 8, 9

d) 89, 76, 89, 76, 52, 76, 8, 89

2. Create a data set that has 6 numbers and has mode 10.

3. Create a data set that has 9 numbers and has mode 15.

4. Which data set has one mode, no mode, or more than one mode?
Draw lines to show the match.

16, 19, 18, 22, 24, 27

one mode

45, 67, 67, 81, 45, 22

no mode

189, 213, 202, 201, 213

more than one mode

Unit 6 Measurement

Lesson	Curriculum Coverage	Lesson Masters and Materials
Lesson 1: Exploring the Calendar	Required	
Lesson 2: Telling Time	Required	
Lesson 3: Elapsed Time	Required	
Lesson 4: Measuring Temperature	Required	
Lesson 5: Exploring Money	Required	
Lesson 6: Estimating and Counting Money	Required	
Lesson 7: Strategies Toolkit	Required	
Lesson 8: Making Change	Required	
Lesson 9: Adding and Subtracting Money	Required	
Lesson 10: Exploring Capacity: The Litre	Required	
Lesson 11: Exploring Capacity: The Millilitre	Required: See Focus Note 6.11	
Lesson 12: Exploring Mass: The Kilogram	Required	
Lesson 13: Exploring Mass: The Gram	Required: See Focus Note 6.13	
Unit Problem: Bake Sale	Required	

Lesson 11: Exploring Capacity: The Millilitre

Focus Note 6.11

Curriculum expectation: Estimate, measure, and record the capacity of containers (e.g., juice can, milk bag), using the standard unit of the litre or parts of a litre (e.g., half, quarter).

Curriculum Focus

Your curriculum requires that students estimate, measure, and record parts of a litre.

Students should be able to identify 250 mL as one-fourth of a litre, 500 mL as one-half of a litre, and 750 mL as three-fourths of a litre.

Extend *Connect*. Discuss that the 1-L container holds the capacity of two 500-mL measuring cups. Each measuring cup holds the equivalent of one-half of a litre.

Ask questions, such as:

- How many 250-mL measuring cups would it take to fill the 1-L container? (4)
- How much is 250 mL of 1 L? (*The 1-L container can hold four 250-mL cups, so one 250-mL cup is one-fourth of a litre.*)

Lesson 13: Exploring Mass: The Gram

Focus Note 6.13

Curriculum expectation: Estimate, measure, and record the mass of objects (e.g., can of apple juice, bag of oranges, bag of sand), using the standard unit of the kilogram, or parts of a kilogram (e.g., half, quarter).

Curriculum Focus

Your curriculum requires that students estimate, measure, and record parts of a kilogram.

Students should be able to identify 250 g as one-fourth of a kilogram, 500 g as one-half of a kilogram, and 750 g as three-fourths of a kilogram.

Extend *Explore* by having students repeat the activity using objects with mass one-half of a kilogram and objects with mass one-fourth of a kilogram.

Unit 7 Motion Geometry

Lesson	Curriculum Coverage	Lesson Masters and Materials
Lesson 1: Grids and Maps	Required	
Lesson 2: Looking at Slides	Required	
Lesson 3: Strategies Toolkit	Required	
Lesson 4: What is a Turn?	Required	
Lesson 5: Exploring Reflections	Required	
Lesson 6: Lines of Symmetry	Required	
Unit Problem: At the Amusement Park	Required	

Unit 8 Exploring Fractions

Lesson	Curriculum Coverage	Lesson Masters and Materials
Lesson 1: Exploring Equal Parts	Required	
Lesson 2: Exploring Fractions of a Length	Required	
Lesson 3: Exploring Fractions of a Set	Required	
Lesson 4: Finding a Fraction of a Set	Required	
Lesson 5: Naming and Writing Fractions	Optional	
Lesson 6: Strategies Toolkit	Optional	
Lesson 7: Mixed Numbers	Optional	
Unit Problem: Pizza Lunch	Optional	

Unit 9 Length, Perimeter, and Area

Lesson	Curriculum Coverage	Lesson Masters and Materials
Lesson 1: Measuring Length in Centimetres	Required	
Lesson 2: Measuring Length in Metres	Required	
Lesson 3: The Kilometre	Required	
Lesson 4: Measuring Perimeter in Centimetres	Required	
Lesson 5: Measuring Perimeter in Metres	Required	
Lesson 6: Covering Figures	Required	
Lesson 7: Measuring Area in Square Units	Required	
Lesson 8: Using Grids to Find Area	Required	
Lesson 9: Comparing Area and Perimeter	Optional	
Lesson 10: Strategies Toolkit	Required	
Unit Problem: Design a Playground	Required	

Unit 10 Patterns in Number and Geometry

Lesson	Curriculum Coverage	Lesson Masters and Materials
Lesson 1: Exploring Number Patterns	Required	
Lesson 2: Number Patterns in Tables	Required	
Lesson 3: Exploring Growing Patterns	Required	
Lesson 4: Strategies Toolkit	Required	
Lesson 5: Patterns with Two Attributes Changing	Required	
Lesson 6: Patterns with Three Attributes Changing	Required	
Lesson 7: Patterns on Grids	Required	
Technology: Patterns on a Computer	Required: See Focus Note Technology	
Unit Problem: Indoor Recess!	Required	

Technology: Patterns on a Computer

Focus Note Technology

Curriculum expectation: Demonstrate, through investigation, an understanding that a pattern results from repeating an action (e.g., clapping, taking a step forward every second), repeating an operation (e.g., addition, subtraction), using a transformation (e.g., slide, flip, turn), or making some other repeated change to an attribute (e.g., colour, orientation).

Curriculum Focus

Your curriculum requires that students demonstrate patterns from repeating an action.

Point out to students that each time they copy a figure in their pattern, their actions are repeating. They are clicking the object they want to copy, dragging the copy, and releasing the click.

Your curriculum also requires students to demonstrate patterns using a transformation.

Extend *Reflect* by having students describe the transformations in their patterns using math vocabulary (e.g., slide, flip, turn).

Unit 11 Probability

Lesson	Curriculum Coverage	Lesson Masters and Materials
Lesson 1: Exploring Possible and Impossible	Optional	
Lesson 2: Conducting Experiments	Required	
Lesson 3: Exploring Probability	Required	
Lesson 4: Strategies Toolkit	Required	
Lesson 5: Fair and Unfair Games	Required	
Unit Problem: Games Day	Required	

Lesson 1: The material in this lesson is not required by the Grade 3 curriculum. However, this lesson should be taught in the first year of implementation to accommodate students' transition to the new curriculum.

Correlation of Ontario Mathematics 2005 Curriculum to Addison Wesley Math Makes Sense 3

Mathematical Process Expectations

The mathematical process expectations are to be integrated into student learning associated with all the strands.

Throughout Grade 3 students will:

Mathematical Process Expectations	<i>Addison Wesley Mathematics Makes Sense Grade 3 Correlation:</i>
<p><i>Problem Solving</i> apply developing problem-solving strategies as they pose and solve problems and conduct investigations, to help deepen their mathematical understanding;</p>	<p><i>Throughout the program.</i> Math Makes Sense follows a problem-solving approach in every lesson, with Explore activities that lead students to conceptual understanding at a developmentally appropriate level; Show & Share discussions allow students to deepen their mathematical understanding of that central problem through sharing perspectives on the same problem or investigation. Practice questions include a range of problem types, regularly including a non-routine problem in the Assessment Focus question. Further explicit support in developing problem-solving strategies is featured in Connect sections, where mathematical thinking is modeled, and in Strategies Toolkit lessons. Students apply their problem-solving strategies throughout each lesson, and in Unit Problems and Cross-Strand Investigations.</p>

Throughout Grade 3 students will:

Mathematical Process Expectations	Addison Wesley Mathematics Makes Sense Grade 3 Correlation:
<p><i>Reasoning and Proving</i> apply developing reasoning skills (e.g., pattern recognition, classification) to make and investigate conjectures (e.g., through discussion with others);</p>	<p><i>Throughout the program.</i> Because Math Makes Sense is grounded in a problem-solving approach to developing mathematical ideas, the program consistently calls on students to apply their reasoning skills in the central Explore activities, during follow-up Show & Share discussions, and in completing a range of Practice questions. Discussion prompts and Practice questions regularly ask students to explain their reasoning. Connect summaries help to model the reasoning behind mathematical concepts, as they offer consolidation of concepts. Unit Problems and Cross-Strand Investigations also draw on students' reasoning skills as they work through a more comprehensive problem.</p>

Throughout Grade 3 students will:

Mathematical Process Expectations	Addison Wesley Mathematics Makes Sense Grade 3 Correlation:
<p><i>Reflecting</i> demonstrate that they are reflecting on and monitoring their thinking to help clarify their understanding as they complete an investigation or solve a problem (e.g., by explaining to others why they think their solution is correct);</p>	<p><i>Throughout the program.</i> Math Makes Sense offers regular opportunities to encourage students to reflect on their strategies and monitor their progress with a problem or investigation, through such features as Show & Share discussions in each Explore, selected Practice questions including Assessment Focus questions that direct students to explain their thinking, and Reflect prompts at the close of each lesson. Connect sections in each lesson model the process of reflection during problem solving.</p>

Through Grade 3 students will:

Mathematical Process Expectations	Addison Wesley Mathematics Makes Sense Grade 3 Correlation:
<i>Selecting Tools and Computational Strategies</i> select and use a variety of concrete, visual, and electronic learning tools and appropriate computational strategies to investigate mathematical ideas and to solve problems;	<i>Throughout the program.</i> Explore activities either explicitly identify materials to use, to provide students with experience using a range of materials, or they allow students to select the most appropriate tool. Similarly, Practice questions may leave the choice of tool to students as they prepare to solve a problem. Students have opportunities to select appropriate computational strategies in the regularly occurring feature entitled Numbers Every Day . Technology features and Technology lessons develop ongoing expertise in use of electronic learning tools.

Through Grade 3 students will:

Mathematical Process Expectations	Addison Wesley Mathematics Makes Sense Grade 3 Correlation:
<i>Connecting</i> make connections among simple mathematical concepts and procedures, and relate mathematical ideas to situations drawn from everyday contexts;	<i>Throughout the program.</i> In addition to the ongoing developmental flow, in which applications-based problems surface regularly in Explore , Connect , and Practice questions, the Student Book highlights connections in Unit Problems , Cross-Strand Investigations , Math Links , and feature pages on The World of Work .

Through Grade 3 students will:

Mathematical Process Expectations	Addison Wesley Mathematics Makes Sense Grade 3 Correlation:
<i>Representing</i> create basic representations of simple mathematical ideas (e.g., using concrete materials, physical actions, such as hopping or clapping; pictures; numbers; diagrams; invented symbols), make connections among them, and apply them to solve problems;	<i>Throughout the program.</i> Explore activities help develop students' facility with multiple representations through the range of materials and representations to which students are exposed across the course of the program; Show & Share discussions encourage students to think about multiple representations of the same concept, while Connect summaries model such representations.

Throughout Grade 3, students will:

<p><i>Communicating</i> communicate mathematical thinking orally, visually, and in writing, using everyday language, a developing mathematical vocabulary, and a variety of representations.</p>	<p><i>Throughout the program.</i> In addition to the ongoing developmental flow, supporting Student Book features include: Show & Share discussions in each Explore activity; Connect summaries to model consolidation of concepts and mathematical conventions; Assessment Focus questions; Reflect prompts at the close of each lesson; Strategies Toolkit lessons; Unit Problems; Cross-Strand Investigations; Key Words at the start of each unit, and an illustrated Glossary.</p>
--	---

Number Sense and Numeration

Overall Expectations

By the end of Grade 3, students will:

- read, represent, compare, and order whole numbers to 1000, and use concrete materials to represent fractions and money amounts to \$10;
- demonstrate an understanding of magnitude by counting forward and backwards by various numbers and from various starting points;
- solve problems involving the addition and subtraction of single- and multi-digit whole numbers using a variety of strategies, and demonstrate an understanding of multiplication and division.

Students will:

Specific Expectations	<i>Addison Wesley Mathematics Makes Sense Grade 3, lessons</i>
<i>Quantity Relationships</i> represent, compare, and order whole numbers to 1000, using a variety of tools (e.g., base ten materials or drawings of them, number lines with increments of 100 or other appropriate amounts);	1.4, 1.5, 1.8, 1.10
read and print in words whole numbers to one hundred, using meaningful contexts (e.g., books, speed limit signs);	1.6
identify and represent the value of a digit in a number according to its position in a number (e.g., use base ten materials to show that the 3 in 324 represents 3 hundreds);	1.6, 1.8
compose and decompose three-digit numbers into hundreds, tens, and ones in a variety of ways, using concrete materials (e.g., use base ten materials to decompose 327 into 3 hundreds, 2 tens, and 7 ones, or into 2 hundreds, 12 tens, and 7 ones);	1.8, 1.11
round two-digit numbers to the nearest ten, in problems arising from real-life situations;	1.14

Specific Expectations	<i>Addison Wesley Mathematics Makes Sense Grade 3, lessons</i>
represent and explain, using concrete materials, the relationship among 1, 10, 100, and 1000, (e.g., use base ten materials to represent the relationship between a decade and a century, or a century and a millennium);	1.13
divide whole objects and sets of objects into equal parts, and identify the parts using fractional names (e.g., one half; three thirds; two fourths or two quarters), without using numbers in standard fractional notation;	8.1, 8.2, 8.3, 8.4
represent and describe the relationships between coins and bills up to \$10 (e.g., “There are eight quarters in a toonie and ten dimes in a loonie.”);	6.5
estimate, count, and represent (using the \$ symbol) the value of a collection of coins and bills with a maximum value of \$10;	6.6
solve problems that arise from real-life situations and that relate to the magnitude of whole numbers up to 1000.	1.13
<i>Counting</i> count forwards by 1’s, 2’s, 5’s and 10’s, and 100’s to 1000 from various starting points, and by 25’s to 1000 starting from multiples of 25, using a variety of tools and strategies (e.g., skip count with and without the aid of a calculator; skip count by 10’s using dimes);	1.2, 1.3, 1.9
count backwards by 2’s, 5’s, and 10’s from 100 using multiples of 2, 5, and 10 as starting points, and count backwards by 100’s from 1000 and any number less than 1000, using a variety of tools (e.g., number lines, calculators, coins) and strategies;	1.2, 1.3, 1.9
<i>Operational Sense</i> solve problems involving the addition and subtraction of two-digit numbers, using a variety of mental strategies (e.g., to add $37 + 26$, add the tens, add the ones, then combine the tens and the ones, like this: $30 + 20 = 50$, $7 + 6 = 13$, $50 + 13 = 63$);	2.7, 2.8
add and subtract three-digit numbers using concrete materials, student-generated algorithms, and standard algorithms;	2.11, 2.12, 2.13, 2.14

Specific Expectations	<i>Addison Wesley Mathematics Makes Sense Grade 3, lessons</i>
use estimation when solving problems involving addition and subtraction, to judge the reasonableness of a solution;	2.10, 2.11 with supporting TG note
add and subtract money amounts, using a variety of tools (e.g., currency manipulatives, drawings), to make simulated purchases and change for amounts up to \$10;	6.8, 6.9
relate multiplication of one-digit numbers and division by one-digit divisors to real-life situations, using a variety of tools and strategies (e.g., place objects in equal groups, use arrays, write repeated addition or subtraction sentences);	4.1, 4.2, 4.8, 4.9
multiply to 7×7 and divide to $49 \div 7$ using a variety of mental strategies (e.g., doubles, doubles plus another set, skip counting).	4.3, 4.6, 4.10

Measurement

Overall Expectations

By the end of Grade 3, students will:

- estimate, measure and record length, perimeter, area, mass, capacity, time and temperature using standard units;
- compare, describe, and order objects, using attributes measured in standard units.

Students will:

Specific Expectations	<i>Addison Wesley Mathematics Makes Sense Grade 3, lessons:</i>
<i>Attributes, Units, and Measurement Sense</i> estimate, measure and record lengths, heights and distances using standard units (i.e. centimetre, metre, kilometre);	9.1, 9.2, 9.3
draw items using a ruler, given specific lengths in centimetres;	9.1
read time using analogue clocks, to the nearest five minutes, and using digital clocks (e.g., 1:23 means twenty-three minutes after one o'clock), and represent in 12-hour notation;	6.2
estimate, read (i.e., using a thermometer), and record positive temperatures to the nearest degree Celsius (i.e., using a number line; using appropriate notation);	6.4
identify benchmarks for freezing, cold, cool, warm, hot and boiling temperatures as they relate to water and for cold, cool, warm, and hot temperatures as they relate to air (e.g., water freezes at 0°C; the air temperature on a warm day is about 20°C, but water at 20°C feels cool);	6.4
estimate, measure, and record the perimeter of two-dimensional shapes, through investigation using standard units;	9.4, 9.5
estimate, measure (i.e., using centimetre grid paper, arrays), and record area (e.g., if a row of 10 connecting cubes is approximately the width of a book, skip counting down the cover of the book with the row of cubes [i.e., counting 10, 20, 30, ...] is one way to determine the area of the book cover);	9.7, 9.8
choose benchmarks for a kilogram and a litre to help them perform measurement tasks;	6.10, 6.12

Specific Expectations	<i>Addison Wesley Mathematics Makes Sense Grade 3, lessons</i>
estimate, measure, and record the mass of objects (e.g., can of apple juice, bag of oranges, bag of sand), using the standard unit of the kilogram or parts of a kilogram (e.g., half, quarter);	6.12, 6.13 with supporting TG note
estimate, measure, and record the capacity of containers (e.g., juice can, milk bag), using the standard unit of the litre or parts of a litre (e.g., half, quarter);	6.10, 6.11 with supporting TG note
<i>Measurement Relationships</i> compare standard units of length (i.e., centimetre, metre, kilometre) (e.g., centimetres are smaller than metres), and select and justify the most appropriate standard unit to measure length;	9.2, 9.3
compare and order objects on the basis of linear measurements in centimetres and/or metres (e.g., compare a 3 cm object with a 5 cm object; compare a 50 cm object with a 1 m object) in problem solving contexts;	9.1, 9.2
compare and order various shapes by area, using congruent shapes (e.g., from a set of pattern blocks or Power Polygons) and grid paper for measuring;	9.6
describe, through investigation using grid paper, the relationship between the size of a unit of area and the number of units needed to cover a surface;	9.7
compare and order a collection of objects, using standard units of mass (i.e., kilogram) and/or capacity (i.e., litre);	6.10-6.13
solve problems involving the relationships between minutes and hours, hours and days, days and weeks, and weeks and years, using a variety of tools (e.g., clocks, calendars, calculators).	6.1, 6.2, 6.3

Geometry and Spatial Sense

Overall Expectations

By the end of Grade 3, students will:

- compare two-dimensional shapes and three-dimensional figures and sort them by their geometric properties;
- describe relationships between two-dimensional shapes, and between two-dimensional shapes and three-dimensional figures;
- identify and describe the locations and movements of shapes and objects.

Students will:

Specific Expectations	<i>Addison Wesley Mathematics Makes Sense Grade 3, lessons:</i>
<i>Geometric Properties</i> use a reference tool (e.g., paper corner, pattern blocks, a carpenter's square) to identify right angles and to describe angles as greater than, equal to or less than a right angle;	3.2
identify and compare various polygons (i.e., triangles, quadrilaterals, pentagons, hexagons, heptagons, octagons) and sort them by their geometric properties (i.e., number of sides; side lengths; number of interior angles; number of right angles);	3.1, 3.3, 3.4
compare various angles, using concrete materials and pictorial representations, and describe angles as <i>bigger than</i> , <i>smaller than</i> , or <i>about the same as</i> other angles (e.g., "Two of the angles on the red pattern block are bigger than all the angles on the green pattern block");	3.3, 3.4 with supporting TG note
compare and sort prisms and pyramids by geometric properties (i.e., number and shape of faces, number of edges, number of vertices) using concrete materials;	3.8, 3.9
construct rectangular prisms (e.g., using given paper nets; using Polydrons), and describe geometric properties (i.e., number and shape of faces, number of edges, number of vertices) of the prisms;	3.10
<i>Geometric Relationships</i> solve problems requiring the greatest or least number of two-dimensional shapes (e.g., pattern blocks) needed to compose a larger shape in a variety of ways (e.g., to cover an outline puzzle);	9.6, 9.7

Specific Expectations	<i>Addison Wesley Mathematics Makes Sense Grade 3, lessons</i>
explain the relationships between different types of quadrilaterals (e.g., a square is a rectangle because a square has four sides and four right angles; a rhombus is a parallelogram because opposite sides of a rhombus are parallel);	3.1, 3.3
identify and describe the two-dimensional shapes that can be found in a three-dimensional figure;	3.8
describe and name prisms and pyramids by the shape of their base (e.g., rectangular prism, square-based pyramid);	3.8
identify congruent two-dimensional shapes by manipulating and matching concrete materials (e.g., by translating, reflecting, or rotating pattern blocks);	3.5
<i>Location and Movement</i> describe movement from one location to another using a grid map (e.g., to get from the swings to the sandbox, move three squares to the right and two squares down);	7.1
identify flips, slides, and turns through investigation using concrete materials and physical motion, and name flips, slides, and turns as reflections, translations, and rotations (e.g., a slide to the right is a translation; a turn is a rotation);	7.2, 7.4, 7.5
complete and describe designs and pictures of images that have a vertical, horizontal or diagonal line of symmetry.	7.6

Patterning and Algebra

Overall Expectations

By the end of Grade 3, students will:

- describe, extend, and create a variety of numeric patterns and geometric patterns;
- demonstrate an understanding of equality between pairs of expressions, using addition and subtraction of one- and two-digit numbers.

Students will:

Specific Expectations	<i>Addison Wesley Mathematics Makes Sense Grade 3, lessons:</i>
<i>Patterns and Relationships</i> identify, extend, and create a repeating pattern involving two attributes (e.g., size, colour, orientation, number), using a variety of tools (e.g., pattern blocks, attribute blocks, drawings);	10.5
identify and describe, through investigation, number patterns involving addition, subtraction, and multiplication represented on a number line, on a calendar, and on a hundreds chart (e.g., the multiples of 9 appear diagonally in a hundreds chart);	1.1, 1.2, 1.3
extend repeating, growing, and shrinking number patterns;	10.1, 10.2
create a number pattern involving addition or subtraction, given a pattern represented on a number line or a pattern rule expressed in words;	10.1
represent simple geometric patterns using a number sequence, a number line, or a bar graph (e.g., the given growing pattern of toothpick squares can be represented numerically by the sequence 4, 7, 10, ..., which represents the number of toothpicks used to make each figure);	10.3
demonstrate, through investigation, an understanding that a pattern results from repeating an action (e.g., clapping, taking a step forward every second), repeating an operation (e.g., addition, subtraction), using a transformation (e.g., slide, flip, turn), or making some other repeated change to an attribute (e.g., colour, orientation);	1.1, 1.2, 1.3, 4.12, 10.1, 10.2, 10.5, 10.6, 10.7, Unit 10 Technology Feature, page 395 with supporting TG note

Specific Expectations	<i>Addison Wesley Mathematics Makes Sense Grade 3, lessons</i>
<i>Expressions and Equality</i> determine, through investigation, the inverse relationship between addition and subtraction (e.g., since $4 + 5 = 9$, then $9 - 5 = 4$; since $16 - 9 = 7$, then $7 + 9 = 16$);	2.4
determine, the missing number in equations involving the addition and subtraction of one- and two-digit numbers, using a variety of tools and strategies (e.g., modelling with concrete materials, using guess and check with and without the aid of a calculator);	2.5
identify, through investigation, the properties of zero and one in multiplication (i.e., any number multiplied by zero equals zero; any number multiplied by 1 equals the original number);	4.5
identify, through investigation, and use the associative property of addition to facilitate computation with whole numbers (e.g., “I know that $17 + 6$ equals $17 + 3 + 13$. This is easier to add in my head because I get $20 + 13 = 33$.”).	2.7

Data Management and Probability

Overall Expectations

By the end of Grade 3, students will:

- collect and organize categorical or discrete primary data and display the data using charts and graphs, including vertical and horizontal bar graphs, with labels ordered appropriately along horizontal axes, as needed;
- read, describe, and interpret primary data presented in charts and graphs, including vertical and horizontal bar graphs;
- predict and investigate the frequency of a specific outcome in a simple probability experiment.

Students will:

Specific Expectations	<i>Addison Wesley Mathematics Makes Sense Grade 3, lessons:</i>
<i>Collection and Organization of Data</i> demonstrate an ability to organize objects into categories, by sorting and classifying objects using two or more attributes simultaneously;	5.1, 5.2
collect data by conducting a simple survey about themselves, their environment, issues in their school or community, or content from another subject;	5.5, 5.9
collect and organize categorical or discrete primary data and display data in charts, tables, and graphs (including vertical and horizontal bar graphs), with appropriate titles and labels and with labels ordered appropriately along horizontal axes, as needed, using many-to-one correspondence (e.g., in a pictograph, one car sticker represents 3 cars; on a bar graph, one square represents 2 students);	5.5, 5.6
<i>Data Relationships</i> read primary data presented in charts, tables, and graphs (including vertical and horizontal bar graphs), then describe the data using comparative language, and describe the shape of the data (e.g., “Most of the data are at the high end.”, “All of the data values are different.”);	5.5, 5.8
interpret and draw conclusions from data presented in charts, tables, and graphs;	5.3, 5.4
demonstrate an understanding of mode (e.g., “The mode is the value that shows up most often on a graph.”), and identify the mode in a set of data;	5.3 with supporting TG note

Specific Expectations	<i>Addison Wesley Mathematics Makes Sense Grade 3, lessons</i>
<p><i>Probability</i> predict the frequency of an outcome in a simple probability experiment or game (e.g., “I predict that an even number will come up 5 times and an odd number will come up 5 times when I roll a number cube 10 times.”), then perform the experiment, and compare the results with the predictions, using mathematical language;</p>	11.2, 11.3
<p>demonstrate, through investigation, an understanding of fairness in a game and relate this to the occurrence of equally likely outcomes.</p>	11.5



Program Authors

Peggy Morrow

Ralph Connelly

Steve Thomas

Jeananne Thomas

Maggie Martin Connell

Don Jones

Michael Davis

Angie Harding

Ken Harper

Linden Gray

Sharon Jeroski

Trevor Brown

Linda Edwards

Susan Gordan

Manuel Salvati

Copyright © 2006 Pearson Education Canada Inc.

All Rights Reserved. This publication is protected by copyright, and permission should be obtained from the publisher prior to any prohibited reproduction, storage in a retrieval system, or transmission in any form or by any means, electronic, mechanical, photocopying, recording, or likewise. For information regarding permission, write to the Permissions Department.
Pages identified as line masters may be copied for classroom use.

Printed and bound in Canada

1 2 3 4 5 – WC – 10 09 08 07 06

